



**U.S. Department of Energy  
Electricity Advisory Committee Meeting**

**National Rural Electric Cooperative Association Conference Center  
Arlington, Virginia  
February 15, 2023**

**Day 1 Meeting Summary**

# CONTENTS

<b>Day 1 Participants.....</b>	<b>ii</b>
Electricity Advisory Committee Members .....	ii
Registered U.S. Department of Energy (DOE), National Laboratories, and Power Marketing Administrations.....	iii
Registered Speakers, Guests, and Members of the Public .....	iii
Registered Support.....	iv
<b>Meeting Overview .....</b>	<b>1</b>
<b>Welcome, Call to Order, Introductions, and Developments Since the Last Meeting .....</b>	<b>1</b>
<b>Update on the DOE Office of Electricity’s Programs and Initiatives .....</b>	<b>1</b>
Discussion.....	1
<b>OE Distribution Design and Planning Presentation .....</b>	<b>3</b>
Discussion.....	3
<b>North American Energy Resilience Model Program Presentation .....</b>	<b>3</b>
Discussion.....	4
<b>Wrap-Up and Adjournment of Day 1 of the February 2023 EAC Meeting.....</b>	<b>5</b>
<b>Signature Page.....</b>	<b>6</b>

## Day 1 Participants

### Electricity Advisory Committee Members

SHARON ALLAN  
Board Advisor & Consultant

LAUREN AZAR  
Azar Law, LLC

ANDREW BARBEAU  
The Accelerate Group, LLC

TOM BIALEK  
Toumetis

JENNIFER CHEN  
World Resources Institute

ROBERT CUMMINGS  
Red Yucca Power Consulting

KIMBERLY DENBOW  
American Gas Association

DREW FELLON  
Alliance Advisory Services

LOUIS FINKEL  
National Rural Electric Cooperative  
Association

LISA FRANTZIS  
Guidehouse

BRIAN HARRELL  
Avangrid

DAVE HERLONG  
NextEra Energy

MICHAEL HEYECK  
The Grid Group, LLC

MARIO HURTADO  
Luma Energy, LLC

LYNNE KIESLING  
University of Colorado Denver, College of  
Engineering, Design and Computing

CLAY KOPLIN  
Cordova Electric Cooperative

BRIAN LIPSCOMB  
Energy Keepers, Inc.

REP. NICOLE LOWEN  
Hawaii House of Representatives

MONICA MARTINEZ  
Ruben Strategy Group, LLC

JESSICA MATTHEWS  
Uncharted Power, Inc.

SAMARA MOORE  
Amazon Web Services

JAY MORRISON  
ElectriCities of North Carolina, Inc.

RICHARD MROZ  
Resolute Strategies, LLC

DARL ENE PHILLIPS  
PJM Interconnection, LLC

WANDA REDER  
Grid-X Partners, LLC

PAUL STOCKTON  
Paul N. Stockton, LLC

RAMYA SWAMINATHAN  
Malta Inc.

TOM WEAVER  
Retired from the American Electric Power  
Company, Inc.

Registered U.S. Department of Energy  
(DOE), National Laboratories, and  
Power Marketing Administrations

RUSSELL BENT

Los Alamos National Laboratory

GIL BINDEWALD

Office of Electricity, U.S. DOE

CARTER EDGE

Southeastern Power Administration

JAYNE FAITH

Office of Electricity, U.S. DOE

MILES FERNANDEZ

Office of Electricity, U.S. DOE

ALI GHASSEMIAN

Office of Electricity, U.S. DOE

PAUL GRABOWSKI

Office of Electricity, U.S. DOE

JOHN GROSH

Lawrence Livermore National Laboratory

NAT HORNER

Office of Electricity, U.S. DOE

ERIC HSIEH

Office of Electricity, U.S. DOE

KENNETH KORT

Office of Clean Energy Demonstrations,  
U.S. DOE

TERRI LEE

Office of Electricity, U.S. DOE

ROSHI NATEGHI

Office of Electricity, U.S. DOE

KARLA OLSEN

Office of Electricity, U.S. DOE

JOSEPH PALADINO

Office of Electricity, U.S. DOE

FERNANDO PALMA

Office of Electricity, U.S. DOE

ANDRE PEREIRA

Office of Electricity, U.S. DOE

GENE RODRIGUES

Office of Electricity, U.S. DOE

ERIC ROLLISON

Office of Cybersecurity, Energy Security,  
and Emergency Response, U.S. DOE

BENJAMIN SHRAGER

Office of Electricity, U.S. DOE

ANNA SIEFKIN

Office of Technology Transitions, U.S. DOE

MERRILL SMITH

Office of Electricity, U.S. DOE

WENBO WANG

National Renewable Energy Laboratory,  
U.S. DOE

JEAN-PAUL WATSON

Lawrence Livermore National Laboratory

Registered Speakers, Guests, and  
Members of the Public

VENKAT BANUNARAYANAN

National Rural Electric Cooperative  
Association

KELI BEARD

State of Utah, School and Institutional Trust  
Lands Administration

RACHEL BOYACK

State of Utah, School and Institutional Trust  
Lands Administration

CAMERON BROOKS  
E9 Insight

MELISSA CROCKER  
Malta, Inc.

KYLE DAVIS  
Enel North America

CHARLES FERGUSON  
National Academy of Sciences

JEREMY HEMPHILL  
Southern Company

TROY HEROLD  
State of Utah, School and Institutional Trust  
Lands Administration

JOHN HOWES  
Redland Energy Group

JIMMY LY  
Beam Reach Consulting Group

SHELLY-ANN MAYE  
DER Consulting

RYAN MURPHY  
Strategics Consulting

NICK NADARSKI  
CHS

LAURA PETRILLO-GROH  
Air-Conditioning, Heating, and  
Refrigeration Institute

THOMAS RYAN  
Southern Company

JEREMY SILVA  
Right Energy Group

JOSH SMITH  
ICF

JOE STEWART  
Mississippi Power Company

MARY TOLER  
Battelle

AJ ZVIBLEMAN  
Reyes Engineering

[Technical Support Team](#)

MARK GIFFORD  
Sidem

TIM HACKSHAW  
Sidem

BERTIE HAMILTON  
Sidem

DIANE MICHAULT  
Sidem

## Meeting Overview

The Electricity Advisory Committee's (EAC) first meeting of 2023 was held February 15 and 16 using a hybrid format at the National Rural Electric Cooperative Association building in Arlington, Virginia, with the option of virtual participation via the video conferencing platform Webex. On the first day of the meeting, Gene Rodrigues, Assistant Secretary (AS) for the U.S. Department of Energy's (DOE) Office of Electricity (OE), provided an update on OE programs and initiatives. Joseph Paladino, Senior Advisor, OE, gave a presentation on OE's distribution design and planning work. Finally, Dr. Ali Ghassemian from OE and representatives from Lawrence Livermore and Los Alamos National Laboratories gave a presentation on the North American Energy Resilience Model Program.

All presentations, as well as recordings of the meeting, can be found at <https://www.energy.gov/oe/february-15-16-2023-electricity-advisory-committee-meeting>.

## Welcome, Call to Order, Introductions, and Developments Since the Last Meeting

Jayne Faith, EAC Designated Federal Officer, welcomed attendees, took attendance, covered several housekeeping items, and officially called the meeting to order. EAC Chair Wanda Reder outlined the agenda across both days and introduced AS Rodrigues.

## Update on the DOE Office of Electricity's Programs and Initiatives

AS Rodrigues noted that the energy industry is rapidly transforming and the opportunities for growth are abundant. He stated that these opportunities do come with challenges for achieving a safe and resilient electric grid, such as the economic destruction from extreme weather events caused by climate change. AS Rodrigues called for a more holistic approach and system-oriented transformation that will benefit households and businesses. He stated that OE has an opportunity to help the country prepare for the energy transformation by advising on technology and economic policy.

### Discussion

#### *Questions and Answers*

**Q1.** Darlene Phillips stated her appreciation for AS Rodrigues's understanding of the energy industry and the collective action required to ensure that the industry can function. Ms. Phillips asked AS Rodrigues to speak on how DOE is working to bring the various groups and technologies together and how the public can get involved.

AS Rodrigues stated that DOE is working with groups and stakeholders to make better policy decisions and is working to be more transparent throughout the decision-making progress. AS Rodrigues stated that the public and field experts need to be championing collective ideas so that regulators, consumer advocates, and other stakeholders can steer the energy grid in the right direction.

**Q2.** Michael Heyeck asked which energy issues are AS Rodrigues's most significant concerns and what he hopes to accomplish within the next year.

AS Rodrigues stated that one of the most significant issues with the energy industry is making policy decisions that fit the entire electrical grid because policy decisions need to account for each territory's unique challenges. He stated that his goal for OE is to align resources to make a greater impact by the end of next year.

**Q3.** Lynne Kiesling noted that, in the past, DOE has been focused on technology development and deployment but currently is focusing on computer science as the grid shifts to digital spaces and tools. She stated that the electric system is a cyber-physical-social system with humans using the system and asked about OE's role in achieving a holistic system.

AS Rodrigues agreed with that characterization of the evolving electric system and stated that OE can shift its perspective on change and how to involve the public in its efforts and that focusing on a broader perspective, and not on a specific technology, will enable OE to see all of the moving parts of the system.

**Q4.** Louis Finkel mentioned that during power outages, such as those in January 2023, States tend to make unilateral decisions without considering directionality, forcing neighboring States to supply needed power. Mr. Finkel asked AS Rodrigues who holds the responsibility for ensuring reliability and how OE fits in to the conversation around reliability issues.

AS Rodrigues noted the importance of recognizing that there is never going to be a uniform decision-making process and that decision makers can learn from disruptions to develop solutions to reliability issues. He stated that OE does own a role in developing solutions to prevent or recover from outages; and that, by learning from experts, OE can help reduce disruptions.

**Q5.** Jay Morrison asked what measures OE can implement to address supply chain shortages and delays.

AS Rodrigues stated that DOE is working to address the current supply chain issues and OE is focused on how grid reliability is impacted by supply chain issues. He noted that these issues create opportunities for economic development and job and manufacturing growth. AS Rodrigues stated that procurement, policy, and manufacturing decisions all have an impact on the supply chain and that OE will need to have broad conversations with different stakeholders to find solutions to supply chain issues.

## OE Distribution Design and Planning Presentation

Joseph Paladino, Senior Advisor, OE, provided an update on OE's distribution design and planning efforts. His remarks and presentation slides can be found online via the link provided in the Meeting Overview section above.

### Discussion

Robert Cummings stated that, when developing solutions, OE should include stakeholders such as the North American Electric Reliability Corporation and the Institute of Electrical and Electronics Engineers, PJM Interconnection, the American Public Power Association, and various utilities.

Sharon Allan mentioned that States and other entities should provide more accurate data and modeling and plans for keeping grid data clean before they receive federal funding.

### *Questions and Answers*

**Q1.** Mario Hurtado referenced Mr. Paladino's roadmap, which included the foundational investment and sequence, and asked what foundational steps should be accomplished first.

Mr. Paladino stated that, although every utility has a unique set of circumstances, there are foundational investments needed to achieve more advanced capabilities and that OE will be working with the industry to map out foundational and co-dependent technology requirements. Mr. Paladino welcomed any suggestions from the EAC on OE's stakeholder engagement strategy.

**Q2.** Richard Mroz asked which entities are included in OE's industry engagement and what the process is for that engagement.

Mr. Paladino stated that OE is forming a working group that includes utilities, vendors, and regulators, but noted that OE has limited authority and cannot dictate anybody's actions.

## North American Energy Resilience Model Program Presentation

### Presenters

- Dr. Ali Ghassemian, Program Manager, Office of Electricity Advanced Grid Modeling, North American Energy Resilience Model (NAERM), and Protective Relaying
- Mr. John Grosh, Deputy Associate Director, Computing, Lawrence Livermore National Laboratory
- Dr. Jean-Paul Watson, Associate Program Leader for Climate-Infrastructure Resilience, Lawrence Livermore National Laboratory

- Dr. Russell Bent, Lead Scientist for the Advanced Network Science Initiative, Los Alamos National Laboratory

Panelist remarks and presentation slides can be found online via the link provided in the Meeting Overview section above.

## Discussion

Tom Bialek encouraged the panel to take an “all of the above” approach during the scenario analysis of the mitigation solutions.

### *Questions and Answers*

**Q1.** Mr. Mroz asked what telecommunications systems will be projected onto the model.

Mr. Grosh stated that the preliminary modeling focused on communication infrastructure that connects to utilities, including control centers and several databases that are being used for the model. He stated that the final modeling is yet to be determined. Dr. Ghassemian added that fiber optics mapping is still in progress.

**Q2.** Jay Morrison asked about the type of screening involved in developing the wildfire maps and a list of vulnerabilities and expressed concern about potential use by terrorists or other bad actors.

Dr. Watson noted that the mapping process only includes qualitative information and does not include individual locations. Mr. Grosh stated that there is a rigorous review and release process to screen information released to the public.

**Q3.** Lynne Kiesling asked how difficult it would be to extend the New England gas integration modeling process to other states, such as Texas or Pennsylvania.

Dr. Bent stated that it would not be difficult to apply the modeling analysis to various parts of the country.

**Q4.** Mike Heyeck asked whether hydrogen could be incorporated into the model. He also asked the presenters to share who monitors the inter area oscillations that could cause separations.

Dr. Bent stated that DOE and the National Laboratories are interested in modeling hydrogen, however, there are technical opportunities that need to be addressed prior to the analysis. Dr. Ghassemian stated that OE is leading projects investigating the new trends in grid oscillatory behaviors and how to control them, which will be integrated into NAERM upon completion.

**Q5.** Sharon Allan noted that the presenters’ modeling may be helpful for utilities that are determining how best to direct hardening investments.

The presenters stated that they would be interested in meeting with utility stakeholders and accessing more data sets to develop such use cases.

**Q6.** Kimberly Denbow noted that presenters should be cautious with regard to extrapolating data from one region to another and from one pipeline to another. She stated that it would also be interesting to include an analysis of a New England pipeline expansion.

Dr. Bent stated that data for each model are specific to the region and that when moving from one region to another; for example, the model does not move the operating agreements of New England into the Southeast.

## **Wrap-Up and Adjournment of Day 1 of the February 2023 EAC Meeting**

Ms. Reder thanked everyone for their contributions and noted the start time for Day 2 of the EAC Meeting.

## Signature Page

Respectfully Submitted and Certified as Accurate,



---

Wanda Reder  
Grid-X Partners, LLC  
Chair  
DOE Electricity Advisory Committee

5/11/2023

---

Date



---

Michael Heyeck  
The Grid Group, LLC  
Vice Chair  
DOE Electricity Advisory Committee

5/11/2023

---

Date



---

Jayne Faith  
Office of Electricity  
Designated Federal Officer  
DOE Electricity Advisory Committee

5/11/2023

---

Date